



**Upcoming
Events/Meetings:**

Census U.S. National Committee
(USNC) Meeting
April 19-20, 2010
Washington, D.C.

Earth Day 40th Anniversary Events
April 22, 2010
Washington, D.C. (The National
Mall)

National Ocean Sciences Bowl
(NOSB) Finals Competition
April 23-25, 2010
St. Petersburg, FL

Census Scientific Steering
Committee (SSC) Meeting
June 2-4, 2010
New York, NY

Capitol Hill Ocean Week
June 8-10, 2010
Washington, D.C.

The Census West Coast Swing Recap

The Census of Marine Life (Census) had a busy February on the West Coast of the United States, showcasing examples of marine biodiversity research and its potential applications at two major conferences.



Our AAAS press briefing participants (L-R) Dr. Shirley Pomponi, Dr. Huw Griffiths, Dr. Jason Hall-Spencer, Ms. Kristina Gjerde, and Dr. Ron O'Dor.

The American Association for the Advancement of Science (AAAS) 2010 Annual Meeting in San Diego, CA was the first stop for Census. The session entitled "One Fish, Two Fish, Red Fish, New Fish: Society Needs Marine Biodiversity Research" kicked things off by exploring the societal implications of Census research, featuring presentations on:

- New polar research that helps us to understand global climate change
- How new understanding about seamounts and tracking and tagging techniques can help to determine marine protected areas
- The development of new pharmaceutical products from marine biological sources
- Real life applications of DNA barcoding from the "Sushi-gate" project

The session was accompanied by a lively press briefing, where each speaker had the chance to summarize the main points of their presentation to journalists from around the world. The session made wide news coverage across Europe and was reported in several U.S. news outlets featuring almost 300 mainstream media articles, and more than 500 blogs and other online mentions. See page two for links to some of our favorite headlines from the event. For more information about the AAAS sessions, including the list of speakers, please see www.coml.us/?Anchor=conferences_aas2010.

After San Diego, Census headed north to Portland, OR for the 2010 Ocean Sciences Meeting, a biennial conference of over 4,000 marine scientists and educators. Census organized and hosted a number of events throughout the week, including two town hall discussions and a session entitled "The Census of Marine Life: Understanding Marine Biodiversity for Better Ocean Management." Similarly to San Diego, this session focused on how certain Census projects have directly affected the tools, techniques or knowledge of how the ocean is managed. A full list of speakers and co-authors is available at www.coml.us/?Anchor=conferences_oceansciences. ★



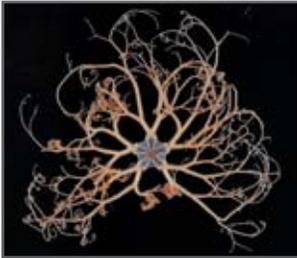
Inside This Issue:

Census West Coast Swing Recap	1
CoML Makes Headlines	2
March <i>Oceanography</i> Features CenSeam	2
Education Corner	3
Ocean Leadership Creates Earthquake Relief Fund	4
Steering Committee Meets In India	5
FAQ's	5
Census Begins Reporting on a Decade of Discovery	6
Join Census on Facebook	6
Seven Questions	7
YouTube Video of the Quarter	9

Please continue to visit www.CoML.us to follow our activities; we may be attending an event in a city near you!



Census of Marine Life Research Makes Headlines



From L to R: Basket star; *Gorganocephalus* sp. This brittle star was filmed expanding its curly, branching arms out after being intertwined with an octocoral. • Ice fish; This transparent fish has no red blood cells and has glycerol in its blood acting as antifreeze. • Octopus; probably *Pareledone* sp. Octopus are particularly common in Antarctica. • Polychaete worm; *Tomopteris* sp. Some species of this type of transparent swimming worm have the ability to produce light through chemical reactions. *Photos courtesy of the British Antarctic Survey*

Huge spiders and anti-freeze fish discovered in depths of Antarctic's seas

<http://news.scotsman.com/environment/Huge-spiders-and-antifreeze-fish.6086985.jp>

Marine census grows near completion

www.msnbc.msn.com/id/35482547/ns/technology_and_science-science/

Great whites more threatened than tigers

www.independent.co.uk/environment/nature/great-whites-more-threatened-than-tigers-1905150.html

Twin threats to fragile undersea colonies of Britain

www.timesonline.co.uk/tol/news/uk/article7032590.ece

Quotable Quotes from the press briefing:

"Antarctic sealife is far more than just penguins."

– Huw Griffiths

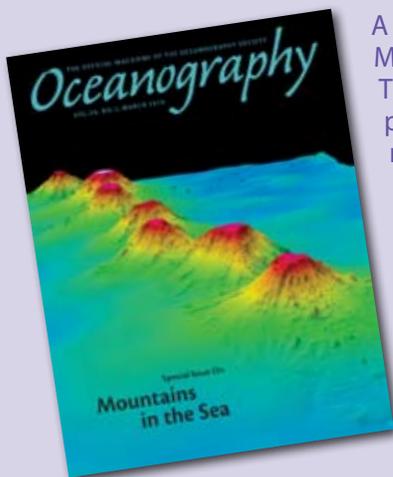
"We can't keep insulting the ocean."

– Ron O'Dor

"The [Census of Marine Life] effort has given us a much clearer window into marine life."

– Shirley Pomponi

March 2010 Issue of Oceanography Focuses on Seamounts, Features CenSeam



A comprehensive, multi-disciplinary discussion of seamount science is the focus of the March 2010 issue of *Oceanography*, the quarterly journal of The Oceanographic Society. The issue focuses on these submerged, isolated mountains in the sea that host complex physical, chemical and biological systems. More than 99 percent of all seamounts on Earth remain unexplored, but studies of a small subset of seamounts show that they provide exciting research opportunities across many science disciplines. The Census of Marine Life supports seamount research through the Global Census of Marine Life on Seamounts (CenSeam) program. To learn more about CenSeam, please visit the project web site at <http://censeam.niwa.co.nz/>.

Several of the papers report the results of the Census' CenSeam project. The "Mountains of the Sea" issue of *Oceanography* is published by the Seamount Biogeosciences Network, which is supported by the Census. The complete online version is freely available on The Oceanography Society's web site at www.tos.org/oceanography/issues/current.html.



Education Corner

Save Our Shells! and ScienceBridge

While at the AAAS meeting in San Diego in February, members of the U.S. Census Program Office had the pleasure to meet Shelley Glenn Lee, Deputy Director of ScienceBridge at the University of California, San Diego (UCSD). Shelley was excited by our panel because the research of one of our Census panelists, Jason Hall-Spencer (Global Census of Marine Life on Seamounts), was the inspiration for a recent ScienceBridge project. We wanted to know more, so we asked Shelley to describe ScienceBridge and their latest project on ocean acidification, a clear and present danger related to climate change and increased atmospheric carbon dioxide. This is what she said:

ScienceBridge is an organization at UCSD that works to connect researchers with local high school students and teachers through innovative lab activities. The "Save Our Shells" curriculum engages students in investigating the relationship between carbon dioxide (CO₂) and ocean pH, experimenting with shells in acidic conditions and exploring the data collected by Dr. Hall-Spencer in the shallow water of Ischia Island, Italy. His study, published in *Nature* (3 July 2008),



is unique among studies of ocean acidification in that it takes place in the field as opposed to the lab. Dr. Hall-Spencer's study site is at a naturally-occurring CO₂ seep in which the effects of lower than normal pH on the ecosystem can be studied across a gradient. The data shows a distinct change in abundance and distribution of organisms across a pH gradient, with shelled organisms less abundant near the seeps and, if present, having weakened shells. His data can be used as a real-world model of what could occur on a global scale as the world's ocean acidifies due to a continued rise in carbon dioxide absorption. Students and teachers have expressed excitement over video footage of the seeps, and the use of real data to learn about ecological research techniques and real-world concepts.

The ocean acidification activities were originally developed by Kate Hanson, a student at Scripps Institution of Oceanography. Kate is part of the NSF Socrates Fellows program and studies coral reef ecosystems. ★

EDUCATION LINK OF THE QUARTER

Want to learn more about ScienceBridge and how they are "creating tomorrow's science leaders through hands-on training and mentorship?" Then please visit the web site at www.biobridge.us. Find the "Save Our Shells" curriculum (available online by summer 2010) and many other great resources. If you can't find what you are looking for on the web site, please contact Shelley at sglenn@ucsd.edu. If you are specifically interested in copies of the "Save Our Shells" activity before this summer, contact Heather Gastil at hgastil@ucsd.edu.





Ocean Leadership Creates Relief Fund

On February 27, 2010 an 8.8-magnitude earthquake struck just off the coast of Chile and caused catastrophic damage to the country. The University of Concepcion, currently Chile's leading institution in oceanography, was hit extremely hard by the earthquake and is trying to re-build their oceanographic research and academic operations affected by this event.

The School of Natural Sciences and Oceanography facilities on the main campus will need significant help. The field station in Dichato was destroyed with the Kai-Kai, the school's coastal vessel, stranded on land. Laboratory and field equipment and instruments are lost or have been destroyed both at the Marine Station at Dichato and the main campus in Concepcion. The pictures of Dichato are heart wrenching. The University of Concepcion is still trying to take a detailed inventory of their equipment, but needless to say, a lot of work and money is needed to recover from this disaster.

The faculty and students of the University of Concepcion are known to many of us as colleagues and friends. Victor Gallardo, professor at the Department of Oceanography at the University of Concepcion, is a vice-chair of the Census Scientific Steering Committee. The good news is that Victor is unharmed, but he lost a lot of research, sam-

ples and equipment and he and his colleagues at the University of Concepcion face an unimaginable situation.

They need our help so they can begin rebuilding their research and education infrastructure. The Consortium for Ocean Leadership



has set up the Concepcion Oceanographic Relief Fund with its bank, SunTrust, so that we can all make a difference.



Deposits to this fund can be made in three different ways. IRS Tax receipts will be issued for all donations.

1. By check.

Make check out to **Concepcion Oceanographic Relief Fund** and forward to Ocean Leadership. Tammy Hancock will be handling the deposits of these funds and is the contact for any questions about the account.

Tammy Hancock
 thancock@oceanleadership.org
 1201 New York Avenue, NW Fourth Floor
 Washington, DC 20005

2. By credit card.

A link on the Ocean Leadership web site is currently being set up for this purpose. It is anticipated that this link will be active within a week.

3. By wire transfer.

Account number: 1000109780469.
 Name of account: Concepcion Oceanographic Relief Fund
 Bank Name: SunTrust
 Bank Address: 1445 New York Avenue, NW
 Washington, DC 20005

Domestic wires:
 ACH routing number: 061000104

Foreign wires:
 SWIFT Code: SNTRUS3A

Ocean Leadership and the Census of Marine Life program staff greatly appreciate your generosity and good will.



Census Scientific Steering Committee Meets in India

The Census International Scientific Steering Committee (SSC) held its first meeting of 2010 in sunny Goa, India. Scientific content review of the Census was high on the agenda as more of the overall products and publications near completion. The meeting was hosted by the Indian Ocean Regional Implementing Committee. A small delegation attended meetings with Indian government officials in New Delhi before traveling south to join the rest of the group in the eastern coastal region

of Goa. Mohideen Wafar, chair of the committee, and D. Chandramohan, an SSC member, gave an update on the region's activities during the meeting, discussing progress to secure post-2010 funding for marine biodiversity research in the area and their continued interest in marine barcoding initiatives. The work of the SSC, Synthesis Group and the entire Census of Marine Life is gaining momentum as we look forward to the report out of the first Census of Marine Life at the "Decade of Discovery Events," October 4-7, 2010 in London. ★



Frequently Asked Question about the Census of Marine Life

Q: Why did the Census of Marine Life start in the first place?

A: The Earth is an ocean planet. The global ocean covers 71 percent of the globe, yet 95 percent of the ocean has yet to be explored. Mars and our moon have been more thoroughly explored. Because there is so much we still don't know about the life that inhabits the ocean, the Census of Marine Life was created, in part, to increase that understanding.

Q: What does the Census plan to do with all the information the scientists collect?

A: The majority of the data and information collected by the Census can be found in the Ocean Biogeographic Information System, or OBIS. OBIS currently contains over 22 million individual records comprised of over 100,000 different species. One of the critical principles of Census is that all of our information becomes freely available to other researchers, and in that spirit, all of the information in OBIS is easily accessible online at <http://iOBIS.org>.

Q: Is the Census an advocacy group? Are you trying to influence, for example, what fish people eat?

A: No. The Census is a source of non-biased scientific information. As a whole, we simply try to present the scientific facts so that others can make well informed decisions.

Q: My family and I are looking to take a vacation this summer. Can we come visit the Census of Marine Life?

A: Sadly, no. The Census is a globally distributed group of 2000+ scientists working together towards a singular goal. Therefore, we are not like an aquarium; there are no central headquarters to visit. But, many of the Census projects have exhibits at aquariums and museums. If you visit one, be sure to ask if there is a Census-related display. You can, however, always visit us on the web at www.CoML.org.

Do you have a question about the Census of Marine Life? Submit it to CoML@OceanLeadership.org and we'll answer it!

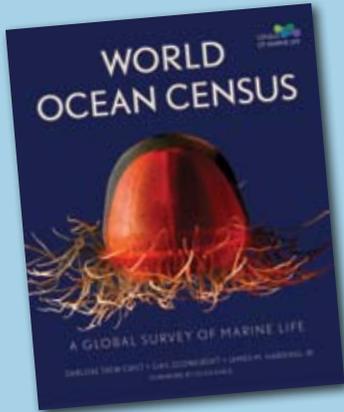


Census Begins Reporting on a Decade of Discovery

As Census works towards reporting on a 'Decade of Discovery' in London in October 2010, many exciting and informational products are being released. These products aim to synthesize the vast amount of data that has been collected about the global ocean.

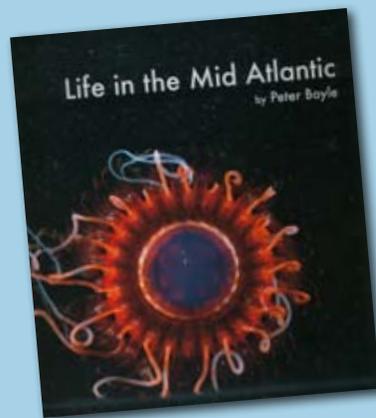
Some products are available now, while others will be released in October.

Books available now:



World Ocean Census: A Global Survey of Marine Life

This beautifully illustrated 256-page book tells the amazing inside story of the Census. The book highlights the stories behind the Census through lively text and over 250 images, the majority graciously provided by Census scientists. The book sets the stage for the release of the first Census of Marine Life in October, 2010.



Life in the Mid Atlantic

This illustrated text provides background information, accounts of goals, plans and technologies, and a final summary of results to date of the Census project MAR-ECO (2001-2010). By adopting novel technology and the best research vessels, the international team significantly enhanced the knowledge of biodiversity of the mid-ocean ridge system.

Products still to come:

Academic Papers – Multiple, special collections of papers will appear in PLoS ONE. The Census Tagging of Pacific Predators project will highlight their tagging results while the National and Regional Implementation Committee papers will look at the current state of knowledge of marine biodiversity on regional scales.

Books – Additional books will be published to provide the general public with an overview of Census discoveries and descriptions of the many interesting marine life forms inhabiting the global ocean.

National Geographic Wall Map – This two-sided map will depict Census findings on “Diversity, Distribution and Abundance of the Oceans – The Known, Unknown and Unknowable” and the “Oceans Past, Present and Future.”

To learn more about Census plans for 2010, please visit the newly launched Decade of Discovery web site at <http://coml.org/coml2010>. Trust us – the site is worth checking out.

Join Census on **facebook**

Are you a social networker? Do you like marine life? Do you want to know what the Census of Marine Life has been up to these days? If you answered 'yes' to any of these questions, why not become a fan of the Census on Facebook! Keep up to date with the latest Census press, project findings, amazing images and activities by becoming a fan today.

www.facebook.com/pages/Census-of-Marine-Life/53194832013?v=info

Seven Questions with members of the Census AAAS Panel

In this regular feature of the U.S. Census Newsletter, we ask a member of the Census Community seven (or so) questions. As mentioned in our cover story, Census recently held a press briefing and session at the AAAS conference. We wanted to ask two of our speakers - Dr. Huw Griffiths, British Antarctic Survey and Census project CAML (Census of Antarctic Marine Life) and Dr. Ellen Prager, Earth2Ocean, Inc. and Aquarius Reef Base - a few questions about their experience at AAAS and their thoughts about the legacies of Census.



Melissa Brodeur: Have you ever been to an event like AAAS before? It is different than a typical scientific conference, correct?

Huw Griffiths: I have attended and given talks at several large scientific meetings in the past but there is definitely something different about AAAS. The scale and variety of topics covered is enormous and the media interest is unlike anything I've experienced at a scientific meeting before.

making the whole experience quite relaxed and enjoyable. The briefing itself was organized with almost military precision and kept to a tight schedule. The journalists were very friendly and I was amazed at how much good publicity the whole thing generated around the world.

MB: For those who couldn't attend, what do you think the key take-away messages are from the Census panel?

"The data collected and made available will be a huge legacy for Census, but even greater will be the networks of scientists brought together to produce this data."

—H. Griffiths

MB: What did you think about the AAAS press briefing in which you participated? What was that experience like for you?

HG: The press briefing was probably the bit I was dreading the most. I had visions of it being a very scary and intimidating experience. However, nothing could have been further from the truth. The media team and the staff from the Census looked after us really well and had us fully prepared for the briefing,

Ellen Prager: The decade-long Census of Marine Life program has provided incredible insight into many of the oceans' least explored realms, such as seamounts and polar regions, and unveiled the amazing abundance and diversity of species living in these remarkable, but little known ecosystems. Tracking studies have also provided new and important information about the movements of marine organisms that have traditionally

been very difficult to document. The number of new species and ecosystems discovered has been utterly surprising and provides just a glimpse of what remains undiscovered in the sea. In addition, the information obtained is now being put to good use in terms of identifying areas of concern given the impacts of climate change and locations where special protection is needed to preserve fragile, unique or especially productive areas. And that marine biodiversity is important to society, not only as the underlying foundation of the ocean food web, but also because of the potential for drug discovery in the sea and as the basis of the marine resources we depend on.

MB: You mentioned that marine biodiversity is important to society. What do you think is the greatest societal benefit? Based on your experiences with writing books and dealing with the media, how should we inform the public of such benefits?

EP: I don't believe we should single out a "greatest" societal benefit, because all of the benefits provided by the ocean are of great value to society. As the underpinning of the ocean food web, marine biodiversity

(continued on next page)



Seven Questions continued...

allows billions of people to obtain a significant portion of the protein in their diet from the sea and many more eat fish as part of a healthy lifestyle. From fishing (recreational and commercial), tourism and support services, hundreds of millions of jobs and billions of dollars in economic revenue are supported by the ocean and marine biodiversity. And today, we are looking to the sea to find compounds to fight widespread human diseases and ailments and organisms to use as models in biomedical research and biotechnology.

"Census projects are going to provide essential information as society strives to better protect the ocean and marine resources"

—E. Prager

To inform the public about these benefits, we need to make the science relevant to the average person, easily understandable and engaging, and find effective and entertaining ways to get our messages out. That is exactly what I hope to do in my upcoming book, "Slime, Sex, and Drugs in the Sea: And why you should care", which takes a brief and hopefully entertaining look at some of the oceans' most fascinating creatures, their unusual tactics for survival and their invaluable links to humankind. The end goal is to showcase the importance of the great diversity of life in the sea, why it is at risk and why we all should care.

MB: On the panel you were joined by two sophomores from Johns Hopkins University. What do you think scientists could learn from

those college students in terms of reaching out to the public?

EP: These two young women were inspirational and presented such a great story. Their high school science project analyzed the DNA of fish samples from stores and restaurants and compared the actual fish with what they were labeled, leading to so-called "Sushi-gate." They illustrated that anyone can do science and it can be fun, productive and incredibly rewarding. They also exemplified how good science can be made media-friendly, explained in a way that anyone can understand and

made an excellent point during the panel, suggesting to scientists that we take better advantage of social networking sites (i.e. Facebook and Twitter) to get the word out. They are terrific ambassadors for the scientific community and role models for all students who are interested in, or may be intimidated by, science.

MB: What key messages would you like to see come out in October 2010 during the Census 'Decade of Discovery' events?

HG: Being someone who works in the Antarctic, I would like to see a message about how interconnected the global oceans are and that even the hard to reach and inhospitable parts of the ocean have an important role to play. I would also be pleased if the Census can provide policy makers and the public with

some real targets for conserving and protecting the ocean.

MB: If someone asks you about the Census of Marine Life next year, what would you tell them? What do you see as Census's greatest legacy?

EP: Early on, I was a serious skeptic about the usefulness of the Census program. I was wrong. Hearing and seeing the results from the Census and how the data are being used has changed my opinion. I now believe that Census projects are going to provide essential information as society strives to better protect the ocean and marine resources, and understand how human activities are impacting marine organisms and the ocean ecosystem. The Census has illustrated just how little we know about the biodiversity within the sea and highlights the need for more research and that we desperately need to use the information we already have in more effective conservation efforts, spatial planning, policy making and implementation and education.

HG: If someone asked me about the Census next year, I would probably tell them that it was a great opportunity for me as an early career scientist to really contribute to a globally important project. The work of the Census has raised public awareness of so many issues about marine biology and conservation as well as bringing scientists together from around the world to look at the bigger picture. The data collected and made available will be a huge legacy for Census, but even greater will be the networks of scientists brought together to produce this data. ★

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Check Out Our YouTube Video Clip of the Quarter!

Diving at Arrival Heights in McMurdo Sound, Antarctica

www.youtube.com/watch?v=rt9HxM0Hpi4

The Census project NaGISA, short for Natural Geography in Shore Areas, is an international collaborative effort to inventory and monitor biodiversity in the narrow inshore zone of the world's oceans at depths of less than 20 meters. The project recently posted a video of their researchers diving at Arrival Heights in McMurdo Sound, Antarctica. In the video you can view an example of NaGISA sampling and even see a curious Weddell Seal in the researchers' dive hole when they return to the surface.

Census U.S. National Committee Members

Dr. Andy Rosenberg (USNC Chair) • University of New Hampshire, Durham, NH
Dr. John W. "Wes" Tunnell (USNC Vice-Chair) • Harte Research Institute, Corpus Christi, TX
Dr. Vera Alexander (SSC Liaison) • University of Alaska, Fairbanks, AK
Dr. Judith Connor • Monterey Bay Aquarium Research Institute, Monterey, CA
Ms. Penelope Dalton • University of Washington, Washington Sea Grant, Seattle, WA
Dr. Sylvia Earle • Conservation International, Oakland, CA
Dr. Daphne Fautin • University of Kansas, Lawrence, KS
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Mr. Terry Garcia • National Geographic Society, Washington, DC
Dr. Pat Halpin • Duke University, Durham, NC
Dr. Jo-Ann Leong • Hawai'i Institute of Marine Biology, Kaneohe, HI
Mr. Paul Kelly • Ret. from Rowan Industries, Houston, TX
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Dr. Clarence Pautzke • North Pacific Research Board, Anchorage, AK
Dr. Shirley Pomponi • Harbor Branch Oceanographic Institution, Fort Pierce, FL
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Ms. Nina Young • National Oceanic and Atmospheric Administration, Silver Spring, MD

*For member's biographies visit our website at: www.coml.us/dev2go.web?anchor=CoML_us_leadership

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